



Your Portal for Standards, Testing, Learning & More

您運用標準文件、測試資訊、學習資源的入口網

## ASTM COMPASS資料庫

涵堂資訊有限公司

國立高雄科技大學

# 簡報大綱

- ASTM組織簡介
- 標準文件介紹
- ASTM COMPASS收錄內容介紹
- 檢索技巧與個人化功能設定



# ASTM international

## 國際標準組織



ASTM INTERNATIONAL  
Helping our world work better



## 組織介紹

- ASTM international 國際標準組織 成立於1898年
- 世界上最早、最大的非營利性標準制定組織。
- 前身為美國材料暨測試學會 American Society of Testing and Materials
- 創辦人為 Charles Benjamin Dudley
- 全球都在使用ASTM標準
- 任何志願者都能成為ASTM會員並參與標準制訂
- 任務是制訂材料、產品、系統和檢測服務的標準及促進有關知識的發展。



**12,500+**  
Global ASTM  
Standards

**30,000+**  
Volunteer  
Members

**140+**  
Participating  
Countries

**120**  
Years of  
Operation

# ASTM 技術標準涵蓋領域

- Aerospace & Shipbuilding 航空&造船
- Agriculture 農業
- Asset Management 資產管理
- Automotive 自動機械
- Building & Construction 建築&建設
- Chemicals 化學
- Consumer Products 消費者產品
- Energy & Utilities 能源&公營事業
- Environment 環境
- Food Processing 食品加工
- Health Care & Medical Devices 健康照護及醫療設備
- Information Technology & Telecommunication 資訊科技&電信
- Manufacturing 製造
- Metals 金屬
- Mining & Mineral Processing 採礦&礦物加工
- Oil & Gas 石油&天然氣
- Pulp & Paper 紙漿&紙張
- Quality 品質
- Safety & Security 安全&防護
- Services 服務
- Sports & Leisure 運動&休閒
- Textiles & Leather 紡織品& 皮革製品
- Transportation & Logistics 交通工具&物流



# ASTM 技術標準委員會



# 標準介紹



# 標準介紹

- 標準是公開的文件，通過認可的機構，制定了規範和程序。
- 目的是確保材料、產品、方法或者服務符合其預期目標的宗旨並一貫的執行。
- 標準化的過程，是包含標準文件的開創、發展和應用。
- 標準是一種共同的語言，確定和建立質量安全標準。如果程序標準化，成本將降低。





# 標準型式

試驗方法(Test Method)	對產生試驗結果的材料、產品、系統或服務的一個或多個性質、特徵或性能進行辨別、測量和評估的過程
標準規範(Standard Specification)	材料、產品、系統或服務滿足一套要求的精確說明，也包括如何滿足每項要求的程序。
標準規程(Practice)	執行一個或多個不產生試驗結果的特定操作或功能的確定的過程。
標準術語(Terminology)	由術語、術語定義、術語描述、符號說明、縮寫等組成的一個檔。
標準指南(Guidance)	例如: F2974 - 17a 審核遊樂設施和設備的標準指南
標準分類(Standard Classification)	基於類似的特徵，例如:成分、原產地、性質或用途進行有系統的分組及劃分。範例: D 2000-05汽車應用的橡膠製品的標準分類系統



# 標準編號

■ 標準代號 + **字母分類代碼** + 標準序號 + 制定年份(修訂年份) + 修訂版次

標準序號後帶字母M的為公制單位標準  
不帶字母M的為英制單位標準

a.b.c.....表示修訂版次

制定年限後面括弧內的年代為標準重新審定的年代

字母分類代碼見「標準分類」

■ 示例：ASTM A34-2001

ASTM C685/C685M-2001

ASTM D4595-86 ( 2001 )

ASTM F2090-01a



# 標準編號分類代碼

- A: 黑色金屬 Ferrous Metals (鐵，錳，鉻，合金鋼，鋼鐵等)
- B: 有色金屬 Non-ferrous Metals (銅，鋁，粉末冶金材料，導線等)
- C: 水泥，陶瓷，混凝土與磚石材料 Cementitious, Ceramic, Concrete and Masonry Materials
- D: 其他各種材料 Miscellaneous Materials (石油產品，燃料，低強塑膠等)
- E: 雜類 Miscellaneous Subjects (金屬化學分析，耐火試驗，無損試驗，統計方法等)
- F: 特殊用途材料 Materials for Specific Applications (電子材料，防震材料，外科用材料等)
- G: 材料的腐蝕，變質與降級 Corrosion, Deterioration, and Degradation of Materials



# 標準在學術領域之應用

- 在全球關鍵科技領域中，獲取最新的研究發現。
- 對於石油、材料科學、能源、環境、土木建築、金屬、油漆、塑膠等領域的研究者，ASTM標準是必備的參考資料。



# ASTM 標準新訊

## Standardization News

Latest News



### Industry Sectors

-  Aerospace
-  Cannabis
-  Chemicals
-  Construction
-  Consumer Products
-  Energy
-  Environment
-  Manufacturing
-  Medical
-  Metals & Materials
-  Quality
-  Safety

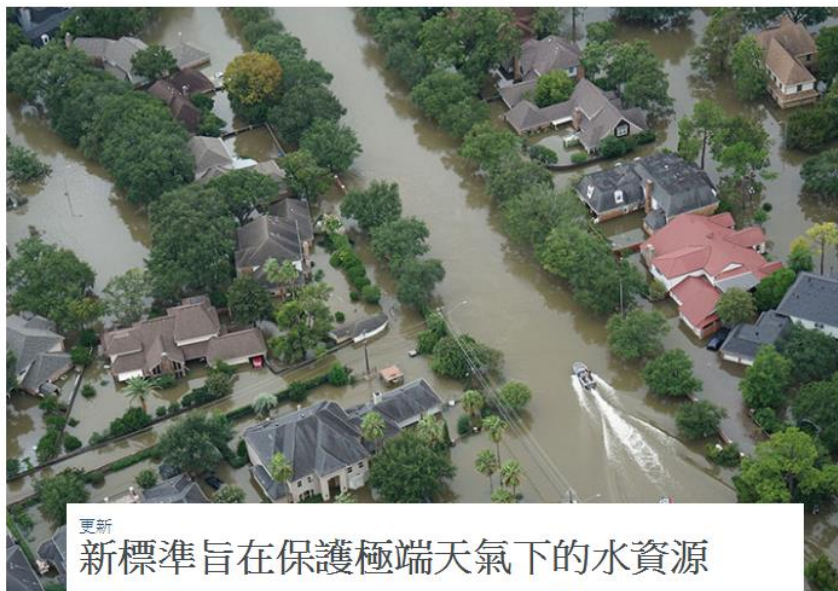
- 進入 ASTM 網站  
<https://www.astm.org/standardization-news/>
- 了解最新各產業的標準資訊



# ASTM 標準新訊

## ASTM標準化新聞

最新消息



更新

### 新標準旨在保護極端天氣下的水資源

新的ASTM國際標準旨在保護人造和天然水資源免受..... [更多](#)

行業：  
環境



行業部門

- 🔧 施工
- 🛒 消費產品
- ⚙️ 金屬和材料
- ⚠️ 安全
- 🌿 環境
- 🚚 運輸
- 🧪 化學製品
- ⚡ 能源
- ⚕️ 醫
- ⚖️ 質量

列

總統專欄  
面試

外展

### ASTM推出增材製造中心，以及更多.....

卓越添加劑製造中心發布7月23日，在奧本大學，ASTM國際組織正式推出其添加劑... [更多](#)



特徵

### 標準促進可持續發展

聯合國可持續發展目標於2016年正式成立，旨在消除貧困，保護地球，確保所有人的繁榮。.....

[更多](#)

行業：

建設 | 安全 | 環境 | 能源





# ASTM COMPASS收錄內容



<http://compass.astm.org>



# ASTM COMPASS 收錄內容介紹

## ASTM標準 STANDARDS

75,473篇

- ASTM現行標準(Active):  
13,355+ 篇
- ASTM歷史標準(Historical)  
52,272+ 篇
- ASTM廢止標準(Withdrawn)  
2351+ 篇
- 標準測試影片
- 支援多語言翻譯



## 數位圖書館 DIGITAL LIBRARY

45,889篇

- 期刊 Journals 17414+ 篇
- 技術文獻 Symposia Papers and STPs 27,685+ 篇
- 手冊及專題著作 Manual/Monographs 82本
- 數據套書 Data Series 45+ 本
- 會議論文 Proceedings
- 布告欄 Bulletins
- 材料搜尋和標準文件 Materials Research and Standards

## 線上課程 E-Learning

- 線上即時教學
- 標準教學影片及自我測驗
- 管理系統教學



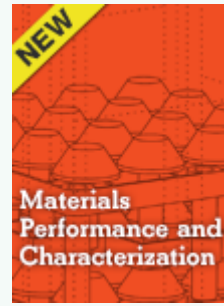
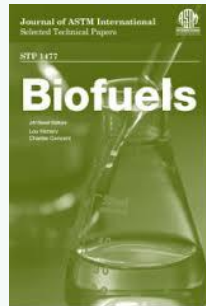
# ASTM COMPASS標準資料庫-提供全球即時的標準內容

- 超過13,500份現行(Active)的技術標準。
- 52,000份歷史(Historical)標準, 2,300份廢止(Withdrawn)標準。
- Work Item (WK)正在進行還未正式發表的標準
- Redline 標準:用色塊標示出前後修訂版本標準差異
- 約有35%的標準文件每年會進行修改。
- 強大的關鍵字或編號搜索。
- PDF或HTML格式的全文標準格式。



# ASTM DIGITAL LIBRARY 數位圖書館

- ASTM 數位圖書館 ( Digital Library ) 收錄ASTM 國際標準組織所出版的刊物，包含專業技術報告、期刊、手冊與專書，內容均可進行電子版本下載。
- 所有文章都經過嚴格的同行評議流程，確保良好學術性內容及技術準確度



# 專業技術報告 SYMPOSIA PAPERS & STPS

收錄ASTM技術委員會主辦的研討會內容，反應全球最新研究結果，並提供制訂新標準的技術及見解。

- 收錄年份: 1931 年迄今
- 累積29,000+文獻
- 以書本格式出版1,598冊

## 涵蓋範圍

- Iron and Steel Products
- Nonferrous Metals Products
- Metals Test Methods and Analytical Procedures
- Construction Materials and Engineering
- Petroleum Products, Lubricants and Fossil Fuels
- Paint, Related Coatings and Aromatics
- Medical Devices and Services
- General Products, Chemical Specialties and End Use Products
- Textiles
- Plastics
- Rubber
- Electric Insulation and Electronics
- Water and Environmental Technology
- Nuclear, Solar, and Geothermal Energy
- General Methods and Instrumentation



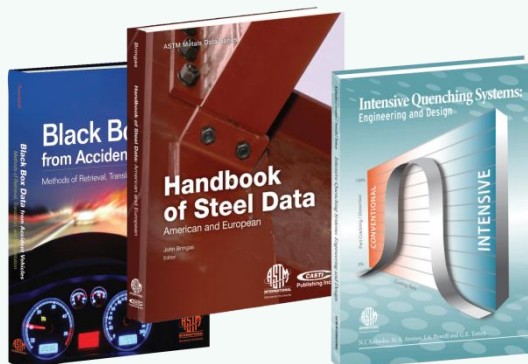
# 手冊與專書 MANUALS, MONOGRAPHS, & DATA SERIES

書籍彙整備受推崇的專家，在各自領域的實踐技術與先進資訊。

- 收錄年份: 1965 年迄今
- 由備受推崇的專家撰寫實用、方便的應用程式資訊 (Manuals) 或先進技術性資訊 (Monographs):共82冊
- ASTM 數據套書Data Series提供了特定的應用說明，包含已編譯的資料。:共48冊

## 涵蓋範圍

- Iron and Steel Products
- Nonferrous Metals Products
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- Construction Materials and Engineering
- Petroleum Products, Lubricants and Fossil Fuels
- Paint, Related Coatings and Aromatics
- Medical Devices and Services
- General Products, Chemical Specialties and End Use Products
- Textiles
- Plastics
- Rubber
- Electric Insulation and Electronics
- Water and Environmental Technology
- Nuclear, Solar, and Geothermal Energy
- General Methods and Instrumentation



# 期刊 JOURNALS-9本期刊

收錄ASTM世界著名的9本現行及歷史期刊文獻，共16,800篇經同儕審核的文章內容

## 現行期刊

- 測試與評估雜誌(JOTE) 1973~至今
- 岩土技術測試雜誌(GTJ) 1978~至今
- 土木工程材料發展(ACEM) 2012~至今
- 材料的性能及特徵(MPC) 2012~至今
- 智能與可持續製造系統(SSMS) 2017~至今 **NEW!**

## 回溯期刊

- ASTM國際期刊(JAI)2004~2012
- 複合材料技術與研究雜誌(JCTR) 1978~2003
- 水泥、混凝土與混合物(CCA) 1979~2004
- 法醫學雜誌(JOFS) 1972-2005



## 其他歷史文獻收錄

### ■ Proceedings 會議論文

追溯1909 - 1965年 ASTM年度國際研討會所產出的會議論文

### ■ ASTM Bulletin 布告欄

追溯於1921 - 1960年 ASTM member magazine季刊雜誌，內容包含技術委員會的活動、發表刊物及技術論文

### ■ Materials Research & Standards材料搜尋和標準文件

追溯於1961 - 1972年 ASTM member magazine月刊雜誌.內容包含技術委員會的活動、發表刊物及技術論文



# ASTM TRAINING AND E-LEARNING - 實踐標準的培訓

Now you can  
train online

- Construction
- Environment
- Metals
- Oxygen
- Petroleum
- Statistics

## E-Learning

Train at your own pace, access on-demand courses, track and evaluate employee progress.

## 線上自我學習課程

The screenshot shows the ASTM eLearning interface. On the left is a 'Menu' sidebar with a tree view containing: Introduction, Slump of Hydraulic-Cement Concrete, Welcome, Learning Objectives, Introduction, Lesson 1: Testing for Slump of Fresh Concrete (with sub-items: Introduction (cont.), Learning Objectives, Need for Measuring Slump, Checkpoint, Slump Test Apparatus/Video), Lesson 2: Practice Exam (with sub-item: Introduction), Lesson 3: Practice Slump Procedure (with sub-items: Introduction, Performing the Test), Course Summary, Course Summary, Final Exam (with sub-item: Final Exam), Resources, Resources, End, End. The main content area is titled 'Slump of Hydraulic-Cement Concrete' and has a 'Welcome' banner. Below the banner, it says 'Welcome to the Slump of Hydraulic-Cement Concrete eLearning course.' and provides a description of the course content. It also mentions that the Certificate of Completion is not equivalent to certification by ACI and provides a link to 'ACI Certification'. At the bottom of the main content area, there is a 'Learning objectives' button and a 'Demo version' label. On the right side of the main content area, there is a list of course sections: Introduction (An overview of the course), 1 Testing for Slump of Fresh Concrete (Learn how properly perform a slump test on fresh concrete), 2 Practice Exam (Practice for the written exam), 3 Practice Slump Procedure (Practice for the practical exam), and Course Summary (Review what you've learned). At the bottom of the interface are 'PREV' and 'NEXT' buttons.

## In-Person Training

Get hands-on training, at our site or your site. Network with your peers, and learn from the experts.

## 專人指導學習課程

- Asphalt Lab Technician Training
- Coal Chemistry
- Corrosion
- Environmental
- Light Sport Aircraft
- Oxygen
- Petroleum
- Plastics
- Rubber
- Statistics
- Textiles

## Webinar Series

Take part in ASTM Training from your home or office through our ASTM Webinar Training Series.

## 參與ASTM Webinar Series 培訓課程

- Additive Manufacturing Technology
- Environmental Assessment & Risk Management
- Fatigue & Fracture
- Fatigue & Fracture, Continued
- Petroleum



# 資料庫特色

- IP連線,不需牢記帳號及密碼。
- 無同時上線人數限制。
- 無下載篇數限制。
- 強大的搜尋引擎。
- 簡易的瀏覽結構。
- 現行的技術標準提供PDF及HTML格式。





## 檢索技巧 & 個人化功能設定

- 連線網址 [Http://compass.astm.org](http://compass.astm.org)
- 或經由圖書館電子資源，登入後連線。



# 登入 ASTM COMPASS 首頁

操作功能下拉選單

搜尋欄位:選擇  
檢索文獻類型

搜尋欄位:輸入  
標題、關鍵字貨  
標準編號

最新更新標準文  
獻

使用技巧與手冊

語言設定

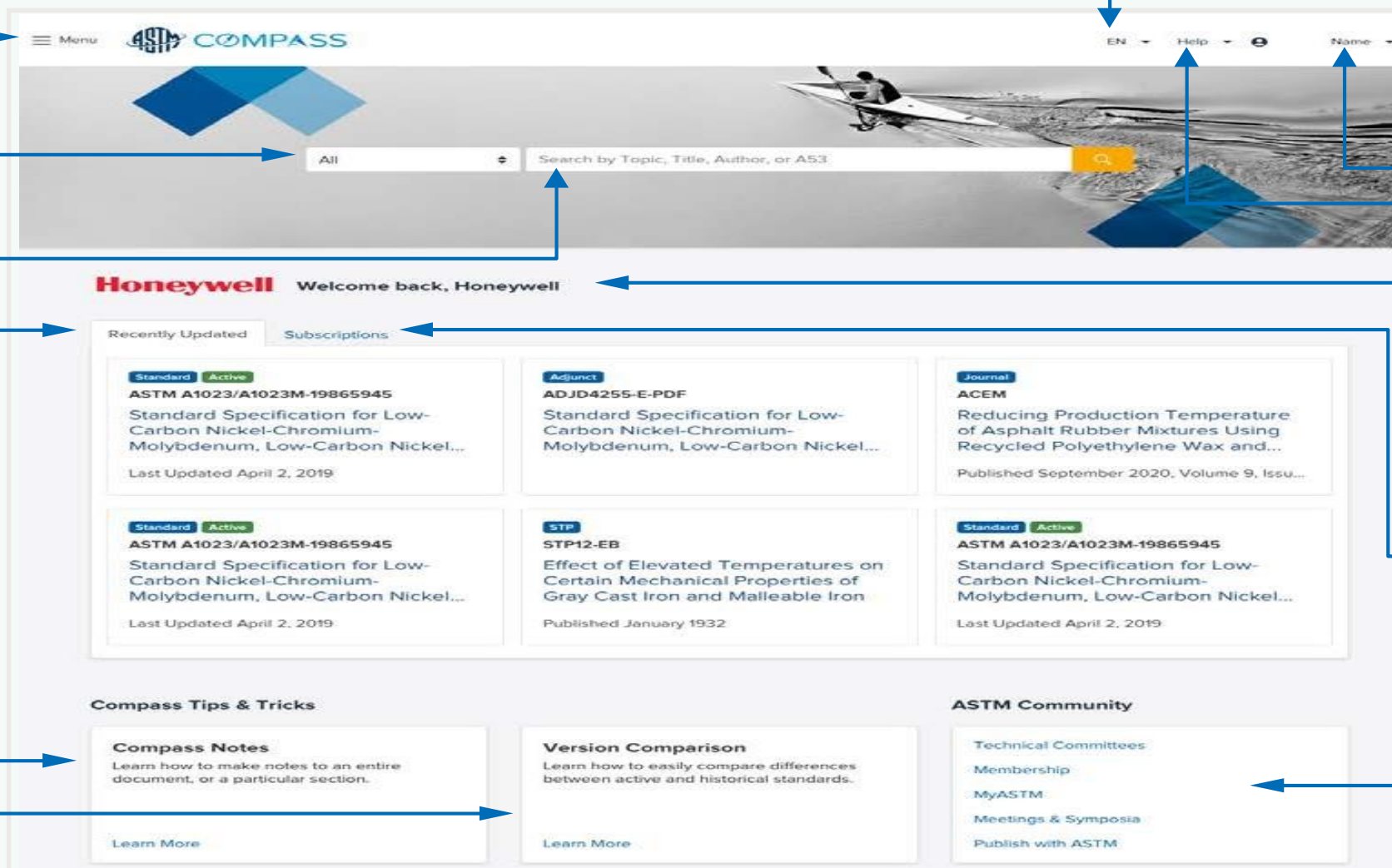
個人化帳號登入

問題與技術支援

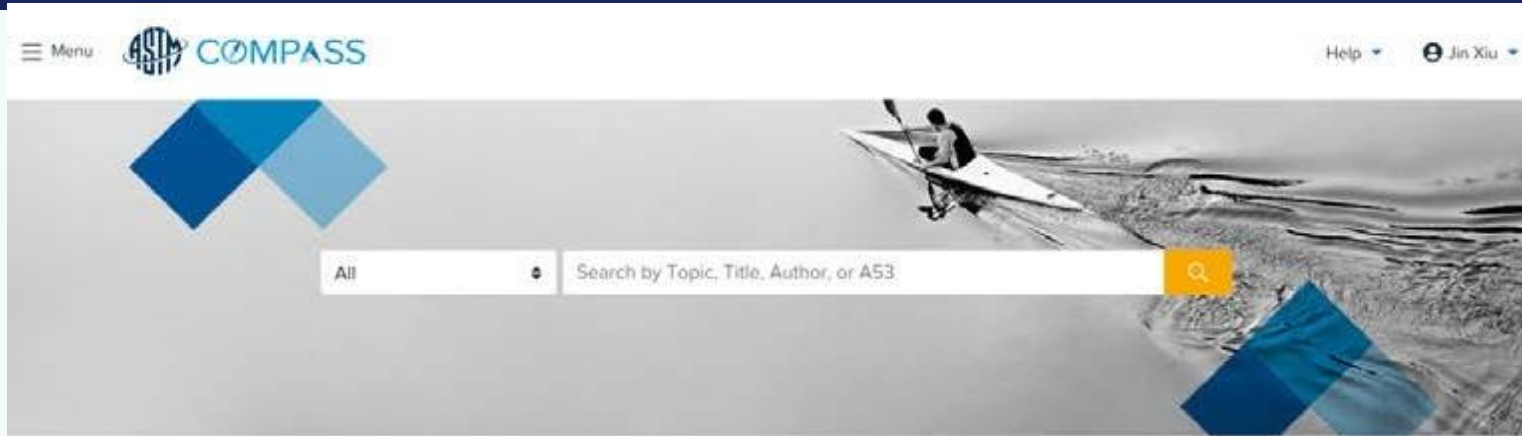
訂閱機構名稱

訂閱內容

ASTM 相關資訊  
連結



# 登入 ASTM COMPASS 首頁 (登入個人化帳號)



顯示個人化帳號  
名稱

Welcome back, Jin Xiu

Recently Accessed

Tracker 2

Favorites

Subscriptions

追蹤檔案更新紀錄

Standard Active

ASTM A1023/A1023M-19865945

Standard Specification for Low-Carbon Nickel-Chromium-Molybdenum, Low-Carbon Nickel...

Last Updated April 2, 2019

Adjunct

ADJD4255-E-PDF

Standard Specification for Low-Carbon Nickel-Chromium-Molybdenum, Low-Carbon Nickel...

Journal

ACEM

Reducing Production Temperature of Asphalt Rubber Mixtures Using Recycled Polyethylene Wax and...

Published September 2020, Volume 9, Issu...

Standard Active

ASTM A1023/A1023M-19865945

Standard Specification for Low-Carbon Nickel-Chromium-Molybdenum, Low-Carbon Nickel...

STP

STP12-EB

Effect of Elevated Temperatures on Certain Mechanical Properties of Gray Cast Iron and Malleable Iron

Standard Active

ASTM A1023/A1023M-19865945

Standard Specification for Low-Carbon Nickel-Chromium-Molybdenum, Low-Carbon Nickel...



# 檢索頁面

檢索條件  
篩選

All

concrete

Show: 25

Sort By: Best Match

Refine Your Results

Clear All

Document type

Publisher

☐ ASTM 134415

☐ AASHTO 337

See More

Category

☐ Applications 95567

☐ Materials 130688

☐ Process 35825

☐ Properties and Measurements 48447

☐ Testing Methods 28256

Technical Committee

Topic

Industry Sector

ICS Code

Standard

ASTM

Active

Last Updated: Feb 12, 2020

English

Other Versions

C125-20

Standard Terminology Relating to Concrete and Concrete Aggregates

1.1 This standard is a compilation of definitions of terms as they are used in standards under the jurisdiction of Committee C09.

Show More

Standard

ASTM

Active

Last Updated: Dec 22, 2020

English

Other Versions

C1634-20

Standard Specification for Concrete Facing Brick and Other Concrete Masonry Facing Units

1.1 This specification covers solid, dry-cast, concrete facing brick and other solid concrete masonry facing units intended for interior and exterior use in constructing structural and facing masonry components and

Show More

Standard

ASTM

Active

Last Updated: Jul 06, 2017

English

Other Versions

C174/C174M-17

Standard Test Method for Measuring Thickness of Concrete Elements Using Drilled Concrete Cores

1.1 This test method covers the determination of the thickness of a concrete pavement, slab, or structural element using drilling cores.

Show More

標準各版本

PDF 下載



# 標準瀏覽

標準狀態 Active /  
Historical 或  
Withdrawn

PDF 模式瀏覽或線上模式瀏覽



All Search keyword(s), designation, author PDF 下載

Track Document Add to Favorites Download Compare Versions

Standard Active | Last Updated: Feb 12, 2020 Translation: English | Other Versions | Document Details

This International standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations Issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

**ASTM C125-20**

**Standard Terminology Relating to Concrete and Concrete Aggregates**

PDF HTML Work Items Related Content

**Designation: C125-20**

**Standard Terminology Relating to Concrete and Concrete Aggregates<sup>1</sup>**

This standard is issued under the fixed designation C125; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

*This standard has been approved for use by agencies of the U.S. Department of Defense.*

**IN THIS STANDARD:**

- Section 1 Scope
- Section 2 Referenced Documents
- Section 3 Terms and Their Definitions
- Section 4 Keywords

**SUMMARY OF CHANGES**

Footnotes

## 紅線標準，快速比較新舊差異

## 標準各版本

## 相關文獻推薦



# 標準範例

This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.



Designation: C125 – 16

## Standard Terminology Relating to Concrete and Concrete Aggregates<sup>1</sup>

This standard is issued under the fixed designation C125; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

*This standard has been approved for use by agencies of the U.S. Department of Defense.*

### 1. Scope\*

1.1 This standard is a compilation of definitions of terms as they are used in standards under the jurisdiction of Committee C09.

1.2 Other terminology under the jurisdiction of Committee C09 is included in two specialized standards. Terms relating to constituents of concrete aggregates are defined in Descriptive Nomenclature C294. Terms relating to constituents of aggregates for radiation-shielding concrete are defined in Descriptive Nomenclature C638.

1.3 Related terminology for hydraulic cement is included in

C143/C143M Test Method for Slump of Hydraulic-Cement Concrete

C219 Terminology Relating to Hydraulic Cement

C294 Descriptive Nomenclature for Constituents of Concrete Aggregates

C403/C403M Test Method for Time of Setting of Concrete Mixtures by Penetration Resistance

C494/C494M Specification for Chemical Admixtures for Concrete

C511 Specification for Mixing Rooms, Moist Cabinets, Moist Rooms, and Water Storage Tanks Used in the Testing of Hydraulic Cements and Concretes



**accreditation**, *n*—*of testing agency*, a process by which an evaluation authority attests that a testing agency has demonstrated the competency to perform specific tasks in accordance with a standard. (2011)

**admixture**, *n*—a material other than water, aggregates, cementitious material, and fiber reinforcement that is used as an ingredient of a cementitious mixture to modify its freshly mixed, setting, or hardened properties and that is added to the batch before or during its mixing. (R2015)

**accelerating admixture**, *n*—an admixture that increases the rate of reaction of cementitious materials thus reducing time of setting and increasing early strength development of a cementitious mixture. (2015)

**air-entraining admixture**, *n*—admixture that causes the development of a system of microscopic air bubbles in concrete or mortar during mixing. (R2008)

**chemical admixture**, *n*—an admixture in the form of a liquid, suspension, or water-soluble solid. (2014)

**mineral admixture**, *n*—deprecated term. (R2008)

**DISCUSSION**—This term has been used to refer to different types of water insoluble, finely divided materials such as pozzolanic materials, cementitious materials, and aggregate. These materials are not similar, and it is not useful to group them under a single term. The name of the specific material should be used, for example, use “pozzolan,” “slag cement,” or “finely divided aggregate,” as is appropriate.

**retarding admixture**, *n*—an admixture that decreases the rate

**DISCUSSION**—The definitions are alternatives to be applied under differing circumstances. Definition (1) is applied to an entire aggregate either in a natural condition or after processing. Definition (2) is applied to a portion of an aggregate. Requirements for properties and grading should be stated in the specification.

**fine aggregate**, *n*—(1) aggregate passing the 9.5-mm ( $\frac{3}{8}$ -in.) sieve and almost entirely passing the 4.75-mm (No. 4) sieve and predominantly retained on the 75- $\mu$ m (No. 200) sieve; or (2) that portion of an aggregate passing the 4.75-mm (No. 4) sieve and retained on the 75- $\mu$ m (No. 200) sieve. (R2008)

**DISCUSSION**—The definitions are alternatives to be applied under differing circumstances. Definition (1) is applied to an entire aggregate either in a natural condition or after processing. Definition (2) is applied to a portion of an aggregate. Requirements for properties and grading should be stated in the specifications.

**heavyweight aggregate**, *n*—see *high-density aggregate*.

**high-density aggregate**, *n*—aggregate with relative density greater than 3.3, such as: barite, magnetite, limonite, ilmenite, iron, or steel. (R2008)

**lightweight aggregate**, *n*—see *low-density aggregate*.

**low-density aggregate**, *n*—aggregate with bulk density less than 1120 kg/m<sup>3</sup> [70 lb/ft<sup>3</sup>], such as: pumice, scoria, volcanic cinders, tuff, and diatomite; expanded or sintered clay, shale, slate, diatomaceous shale, perlite, vermiculite, or slag; and end products of coal or coke combustion. (R2008)

**normal-density aggregate**, *n*—aggregate that is neither high nor low density. (R2008)



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**\*A Summary of Changes section appears at the end of this standard**

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# 實際操作

## 1. 請試著檢索標準編號並下載 ASTM D1143 橋梁負重測試最新標準” D1143/D1143M-20 Standard Test Methods for Deep Foundations Under Static Axial Compressive Load” 之PDF 檔案

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ASTM INTERNATIONAL

Designation: D1143/D1143M - 07 (Reapproved 2013)<sup>e1</sup>

### Standard Test Methods for Deep Foundations Under Static Axial Compressive Load<sup>1</sup>

This standard is issued under the fixed designation D1143/D1143M; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (e) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the U.S. Department of Defense.

<sup>e1</sup> NOTE—Editorially corrected the title of Figure 2 in June 2018.

#### 1. Scope

1.1 The test methods described in this standard measure the axial deflection of a vertical or inclined deep foundation when loaded in static axial compression. These methods apply to all deep foundations, referred to herein as **piles**, that function in a manner similar to **driven piles or cast-in-place piles**, regardless of their method of installation, and may be used for testing single **piles or pile groups**. The test results may not represent the long-term performance of a deep foundation.

1.2 This standard provides minimum requirements for testing deep foundations under static axial compressive load. Plans, specifications, and/or provisions prepared by a qualified engineer may provide additional requirements and procedures as needed to satisfy the objectives of a particular test program. The engineer in **responsible** charge of the foundation design, referred to herein as the **engineer**, shall approve any deviations, deletions, or additions to the requirements of this standard.

1.3 This standard allows the following test procedures:

Procedure	Test Method	Units
Procedure A	Quick Test	8.1.2
Procedure B	Maintained Test (Optional)	8.1.3
Procedure C	Loading in Excess of Maintained Test (Optional)	8.1.4
Procedure D	Constant Time Interval Test (Optional)	8.1.5
Procedure E	Constant Rate of Penetration Test (Optional)	8.1.6

the constructed foundation. See Appendix X1 for comments regarding some of the factors influencing the interpretation of test results.

1.6 A qualified engineer shall design and approve all loading apparatus, loaded members, support frames, and test procedures. The text of this standard references notes and footnotes which provide explanatory material. These notes and footnotes (excluding those in tables and figures) shall not be considered as requirements of the standard. This standard also includes illustrations and appendices intended only for explanatory or advisory use.

1.7 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

1.8 The gravitational system of inch-pound units is used when dealing with inch-pound units. In this system, the pound [lbf] represents a unit of force [weight], while the unit for mass is slug. The rationalized slug unit is not given, unless dynamic [F=ma] calculations are involved.

ASTM INTERNATIONAL

Designation: D1143/D1143M - 20

### Standard Test Methods for Deep Foundation Elements Under Static Axial Compressive Load<sup>1</sup>

This standard is issued under the fixed designation D1143/D1143M; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (e) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the U.S. Department of Defense.

#### 1. Scope

1.1 The test methods described in this standard measure the axial deflection of an individual vertical or inclined deep foundation element or group of elements when loaded in static axial compression. These methods apply to all types of deep foundations, or deep foundation systems as they are practical to test. The individual components of which are referred to herein as **elements** that function as, or in a manner similar to, drilled shafts, cast-in-place piles (augered cast-in-place piles, barrettes, and slurry walls), driven piles, such as pre-cast concrete piles, timber piles or steel sections (steel pipes or wide flange beams) or any number of other element types, regardless of their method of installation. Although the test methods may be used for testing single elements or element groups, the test results may not represent the long-term performance of the entire deep foundation system.

1.2 This standard provides minimum requirements for testing deep foundation elements under static axial compressive load. Plans, specifications, and/or provisions prepared by a qualified engineer may provide additional requirements and procedures as needed to satisfy the objectives of a particular test program. The engineer in charge of the foundation design referred to herein as the **engineer**, shall approve any deviations, deletions, or additions to the requirements of this standard, to predict the actual performance and adequacy of elements used in the constructed foundation.

1.5 A qualified engineer (qualified to perform such work) shall design and approve all loading apparatus, loaded members, and support frames. The geotechnical engineer shall design or specify the test procedures. The text of this standard references notes and footnotes which provide explanatory material. These notes and footnotes (excluding those in tables and figures) shall not be considered as requirements of the standard. This standard also includes illustrations and appendices intended only for explanatory or advisory use.

1.6 Units—The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

1.7 The gravitational system of inch-pound units is used when dealing with inch-pound units. In this system, the pound [lbf] represents a unit of force [weight], while the unit for mass is slug. The rationalized slug unit is not given, unless dynamic [F=ma] calculations are involved.

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ASTM C512/C512M-15

Standard Test Method for Creep of Concrete in Compression

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 Designation: C512/C512M – 15

**Standard Test Method for  
Creep of Concrete in Compression<sup>1</sup>**

# NOTES 我的註解

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Standard Test Method for Measuring Thickness of Concrete Cores<sup>1</sup>

This standard is issued under the fixed designation C125; the number following the designation indicates the year of original adoption or, in the case of subsequent revision, the year of last revision. A superscript epsilon (ε) indicates an editorial change since the last revision or adoption of the standard. This standard has been approved for use by agencies of the U.S. Department of Commerce.

1. Scope\*

1.1 This test method covers the determination of the thickness of a concrete pavement, slab, or structural element using drilling cores.

1.2 The values stated in either SI units or inch-pound units are to be regarded separately as standard. Within the text, the inch-pound units are shown in brackets. The values stated in each system are not exact equivalents; therefore, each system shall be used independently of the other.

1.3 This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

2. Referenced Documents

2.1 ASTM Standards:<sup>2</sup>

C42/C42M Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete

C125 Terminology Relating to Concrete and Concrete Aggregates

C670 Practice for Preparing Precision and Bias Statements for Test Methods for Construction Materials

2.2 AASHTO Standards:<sup>3</sup>

AASHTO T148 Method of Test for Measuring Length of Drilled Concrete Cores

3. Definitions:

3.1.1 For definitions of terms used in this test method, refer to Terminology C125.

4. Significance and Use

4.1 This test method is used to determine the compliance of concrete construction with design specifications and is commonly used in determining the thickness of pavements and other slab construction. This test method requires that at least one end of the core be a finished or formed surface.

5. Apparatus

5.1 The apparatus shall consist of a base plate with three posts to support the core in a vertical direction, and top plate or other means of establishing a plane that is parallel to and a measured distance from the plane defined by the supporting posts. The apparatus includes a measuring rod as described in 5.5 or other means to determine the length of axial elements of the core. While the details of the mechanical design are not prescribed, the apparatus shall conform to the requirements of 5.2 – 5.6. An example of an apparatus is illustrated in Fig. 1.

5.2 The base of the apparatus shall be so designed that the core will be held with its axis in a vertical position by three symmetrically placed supports bearing against the lower end of the core. These supports shall be short posts or studs of hardened steel, and the ends that bear against the surface of the core shall be rounded to a radius of not less than 6 mm [¼ in.]

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